ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Preparation for International	)	IC Docket No. 94-31
Telecommunication Union World	)	
Radiocommunication Conferences	)	

To: The Commission

COMMENTS OF TRW INC.

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March 6, 1995

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SUMMARY

TRW supports the Commission's proposals to advocate relaxing the current constraints on MSS use of the 1610-1626.5 MHz and 2483.5-2500 MHz bands. It believes, however, that the Commission should advocate further clarifying steps to facilitate MSS implementation, including a proposal to eliminate Footnote 733E, which currently creates the unwarranted impression that NGSO MSS in the 1.6 GHz spectrum is less than co-primary with the radio astronomy service. Proposing to eliminate this footnote would be consistent with the Commission's already proposed initiative to strike the final sentence of Footnote 731E, which currently creates similar confusion with respect to NGSO MSS and the aeronautical radionavigation service.

More importantly, the Commission must work persistently to secure sufficient feeder link spectrum to accommodate initially all of the MSS systems conditionally licensed in these bands, plus as many subsequent entrants as feasible. Failure to obtain viable feeder link spectrum for MSS could render meaningless the Commission's impressive efforts over the past five years to champion the establishment and implementation of this important new service.

In particular, the Commission should correct the omission of the 29.5-30.0 GHz and 19.7-20.2 GHz from its Preliminary Draft Proposal No. 1/FL-MSS. TRW firmly believes that its proposed use of 300 megahertz of spectrum in each of these bands for its feeder links can be accomplished without unduly constraining other FSS uses. As an additional option, the Commission should propose allocating 500 megahertz of spectrum in each direction at 29.0-29.5 GHz and 19.2-19.7 GHz. Finally, the Commission should also pursue the possibility that NGSO MSS feeder links can make bi-directional use of spectrum

in the 18.8-19.7 GHz band (i.e., in the Earth-to-space direction) paired with a suitable band below 17.7 GHz (e.g., 15.4-15.7 GHz) for space-to-Earth transmissions on a co-directional or bi-directional basis. These uses of spectrum are fully consistent with the conclusions advanced in the recent Task Group 4/5 Report. In each case, the Commission should propose waiving the requirements of RR 2613. In addition, Resolution 46, as suitably modified, should apply to coordination between geostationary satellite networks and non-geostationary satellite networks, between non-geostationary networks, and between non-geostationary networks and any terrestrial services. Finally, as suggested by Task Group 4/5 with regard to subbands at 27.5-30.0 and 19.7-20.2, GSO FSS networks brought into service after a date certain should not be permitted to either claim protection from or cause interference to NGSO MSS feeder link networks operating in the same band. Suggested changes to the Table of Allocations (RR Art. 8) are included as an Attachment to TRW's Comments.

In order to obtain adequate spectrum for NGSO MSS feeder links and service links for future MSS use, the Commission may also want to consider what negotiating chips it may have to give up to achieve the overall goal of additional MSS spectrum. For example, it may be prudent to give up the notion of advancing the worldwide effective date for MSS use in the 2 GHz bands, as opposition from many developing countries is likely to be intense and even domestic use is likely to be strictly limited prior to 2005. The Commission should work toward a paramount goal of ensuring that sufficient service and feeder link spectrum is made available for MSS to accommodate very high global demand; but should not squander negotiating capital simply to micromanage dates of entry for spectrum that has already been secured for future use.

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COMMENTS OF TRW INC.

TRW Inc. ("TRW"), by its attorneys and pursuant to Sections 1.415 and 1.430 of the Commission's Rules, hereby responds to the Commission's Second Notice of Inquiry in the above-captioned docket, which seeks views concerning preliminary U.S. proposals for the 1995 World Radiocommunication Conference ("WRC"). See Preparation for International Telecommunication Union World Radiocommunication Conferences, FCC 95-36 (released January 31, 1995) ("Second NOI"). TRW herein provides the Commission with its current views relating to important mobile-satellite services ("MSS") and other issues that must be addressed at the upcoming WRC, to be held in Geneva, Switzerland from October 23 to November 17, 1995 under the auspices of the International Telecommunication Union ("ITU").

I. INTRODUCTION AND STATEMENT OF INTEREST

As the Commission's Second NOI recognizes, WRC-95 will be a critical milestone in the development of MSS as a global telecommunications industry. The Commission has observed that this new industry can be a linchpin element in the establishment of a new seamless global network with the promise "to stimulate significant economic growth both domestically and abroad."[1/] This promise will only be realized, however, if there is sufficient useable MSS spectrum allocated on a world-wide basis, for both service and feeder links, to ensure that multiple service providers will have sufficient system capacity to offer robust, competitive services. Accordingly, resolving these MSS issues must be the primary U.S. goal going into WRC-95.

As a conditional licensee to provide non-geostationary MSS ("NGSO MSS") service in the 1610-1625.5 MHz and 2483.5-2500 MHz frequency bands via its Odyssey™ system, TRW has a special interest in achieving the goal of successful global implementation of MSS.[2/] These bands were allocated to the MSS world-wide on a co-primary basis as the result of successful U.S. negotiating efforts at the

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1/ See Second NOI, FCC 95-36, slip op. at ¶ 6.

2/ See TRW Inc., DA 95-130 (Int'l Bur., released January 31, 1995) (granting TRW a conditional license).

1992 World Administrative Radio Conference ("WARC-92"). TRW provides its comments here in an effort to assist the Commission and the United States' delegation to WRC-95 in building upon this initial success to create a strong, competitive MSS industry.

II. DISCUSSION

A. Issues Affecting The Mobile-Satellite Service Between 1 And 3 GHz

In advancing the goal of a viable global MSS industry, TRW believes that the Commission has accurately identified three fundamental areas that require action at WRC-95.[3/] First, the U.S. must seek to eliminate existing impediments to MSS use of bands already allocated for this service. Second, the U.S. must secure adequate, useable feeder link spectrum that will support MSS user links for the service bands already identified; without these gateway links, the primary service allocations will be virtually useless. Third, at WRC-95 and beyond, if necessary, the U.S. must press for additional viable MSS service and feeder link spectrum in order to accommodate the burgeoning worldwide demand for this service. Finally, in light of these important and challenging goals, the Commission should carefully consider whether there is any utility in seeking advancement of the date of global availability

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3/ See Second NOI, FCC 95-36, slip op. at ¶8.

for the 2 GHz bands already allocated for MSS in view of the significant obstacles that exist to near-term MSS implementation in those bands.

1. Impediments To Implementation Of MSS In Existing Bands Allocated For This Service

a. Technical Constraints

When the 1610-1626.5 MHz and 2483.5-2500 MHz bands were allocated to the MSS at WARC-92, certain conditions were imposed on the allocations across the three ITU regions.[4/] As currently written, some of the regulations could be interpreted in ways that would impinge upon reasonable use of the bands by non-geostationary ("NGSO") MSS systems. Accordingly, TRW called upon the Commission in its initial comments to recommend that the United States Government propose to modify or clarify at WRC-95 those provisions that would be most burdensome upon the development of MSS.[5/]

In its Second NOI, the Commission has answered the calls by TRW and most other MSS parties in this proceeding, and determined preliminarily to pursue needed changes in the footnotes accompanying the international table of allotments. TRW agrees with most of the proposals that the Commission advances, but believes

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4/ See Footnotes 731E, 731F, 733A, 733E, 753, 753C, and 753F to the International Table of Allocations.

5/ See Comments of TRW Inc., IC Docket No. 94-31, at 6 (filed July 15, 1994).

that the Commission has not gone far enough in one instance, i.e., resolving the ambiguities created by Footnote 733E.

(1) Footnote 731E

In its initial comments in this docket, TRW requested that the Commission work to harmonize the inherent contradictions in the current text of ITU Footnote 731E. As the Commission states in the Second NOI, the current text of Footnote 731E is problematic because it sets forth specific e.i.r.p. limits applicable to the 1610-1626.5 MHz band, but does not clearly delineate how these limits apply.[6/] This problem is compounded by the fact that, having already set these specific limits, the regulation also provides that MSS stations "not cause harmful interference to, or claim protection from stations in the aeronautical radio navigation service, stations operating in accordance with No. 732 band stations in the fixed service operating in accordance with No. 730."[7/] The effect of this second provision appears incorrectly to place MSS operators in a secondary status relative to the other named services.

In its initial comments, TRW asked that the Commission stake out a position that the specific e.i.r.p. limit of -15 dBW/4 kHz for MSS transceivers in RR 731E is intended to identify a threshold level of acceptable interference beyond which

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6/ See Second NOI, FCC 95-36, slip op. at ¶20.

7/ ITU RR 731E.

interference may be considered harmful. TRW also proposed that the Commission advocate eliminating the inconsistent final sentence of the regulation.[8/]

Taking up the suggestions of TRW and other interested MSS parties, and the specific interim recommendations of the IAC, the Commission has proposed several refinements of Footnote 731E. First, the Commission has adopted the suggestion of Task Group 8/3 concerning e.i.r.p. density to make clear that this limit is not an absolute, or peak, emission limit, but a mean value.[9/] Second, the Commission has adopted the view that RR No. 953 provides sufficient recognition of the need to protect safety services, and has proposed that the final sentence of Footnote 731E be deleted and replaced by a simple cross-reference to RR No. 953.[10/] TRW supports these changes.

(2) Footnote 733E

Having adopted the view that RR 731E should be modified, TRW believes that the Commission should also promote a U.S. position that Footnote 733E be deleted from the Radio Regulations for similar reasons. As the Commission explains in the Second NOI, this footnote was originally adopted when the radioastronomy service ("RAS") had only secondary status in order to protect RAS

8/ See Comments of TRW, IC Docket No. 94-31, at 7 (filed July 15, 1994).

9/ See Second NOI, FCC 95-36, slip op. at ¶ 23.

10/ See id.

stations operating at 1610.6-1613.8 MHz in Regions 1 and 3 from any harmful interference that might be caused by operations in the radio-determination satellite service, which was and is primary in these bands.[11/] With the elevation of RAS in these bands to co-primary status world-wide (along with MSS) at WARC-92, the footnote has become redundant.

Despite these straight-forward circumstances, the Commission has declined to propose the deletion of RR 733E, even though the only basis raised for its retention is that it acts as "a flag that reminds other spectrum users of the need to use special coordination measures in the 1610.6 - 1613.8 MHz band."[12/] TRW believes that the allocation tables themselves, with their identification of the services' co-primary status, is a sufficient indicator that coordination is required. The level of protection originally intended by the footnote is now accorded to RAS on a global basis by virtue of its co-primary status, and the footnote should therefore be eliminated in order to preclude unwarranted claims that it entitles RAS locations to an additional measure of protection with respect to out-of-band emissions, thereby undercutting the effect other explicit ITU regulations.[13/]

11/ See Second NOI, FCC 95-36, slip op. at ¶ 25.

12/ See Second NOI, FCC 95-36, slip op. at ¶ 26.

13/ For example, ITU RR 344 provides that ". . . protection from services in other bands shall be afforded the radio astronomy service only to the extent that such services are protected from each other."

(3) Footnote 753F

In initial comments, TRW and other MSS proponents pointed out a contradiction created by the cross reference in Footnote 753F to RR 2566. While Footnote 753F clearly states that coordination is required only when the power flux density ("PFD") values stated in RR 2566 are exceeded, the latter regulation expresses these limits in absolute terms.[14/] Moreover, adherence to the PFD limits stated in RR 2566 would unnecessarily limit MSS system capacity because these systems can operate with higher PFD levels without adverse impact to fixed users in the band. Costly and time consuming coordination efforts ought not be so imposed.

The Commission has answered these concerns by proposing to remove the reference to RR 2566 and proposing to establish in its place slightly relaxed PFD values, as advocated by most NGSO MSS proponents.[15/] TRW strongly endorses this proposal, which is consistent with the conclusions reached by the ITU's Radiocommunication Sector Task Group 2/2 and with the recommendations of the IAC. These changes will substantially enhance the efficiency of the use of the 2483.5-2500 MHz band by the NGSO MSS.

14/ Compare RR 2566 and Footnote 753F. The second sentence of Footnote 753F reads as follows: "Coordination of space stations of the mobile-satellite and radio-determination satellite services with respect to terrestrial services is required only if the power-flux density produced at the earth's surface exceeds the limits in [RR] No. 2566."

15/ See Second NOI, FCC 95-36, slip op. at ¶¶ 30-31.

b. Allocation Constraints

(1) Generic Allocations

TRW supports the Commission's proposal to advocate generic MSS allocations that remove arbitrary limitations on the use of frequency bands -- not only in the 1525-1559 MHz and 1626.5-1660.5 MHz bands, but in all bands allocated for MSS. The strong trend in global development of MSS services is toward systems that serve all categories of users.

Any initiative developed in this area, however, should preserve flexibility not only for the various types of MSS that may be offered, but also for the technical approaches to implementing such service. Specifically, the U.S. position should ensure that no MSS bands are subject to restrictions that would unreasonably limit their use for NGSO MSS operations.

(2) 1675 - 1710 MHz Band

The Second NOI also proposes to facilitate world-wide MSS use of the 1675-1710 MHz bands, which are currently allocated on a co-primary basis for such use in ITU Region 2 only.[16/] While TRW strongly believes that analysis of the potential for MSS use of this band should go forward, the domestic impediments to MSS use of this spectrum are, by themselves, daunting. The Region 2 co-primary

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16/ See Second NOI, FCC 95-36, slip op. at ¶ 34.

allocation in this band was not a U.S. proposal at WARC-92, and was only begrudgingly accepted by the United States as a last-minute compromise. In fact, the allocation is "co-primary" in name only, due to the limitations of Footnote 735A, which provides that MSS stations "shall not cause harmful interference to, nor constrain the development of, the meteorological-satellite ["MetSat"] and meteorological aids services" ("MetAids").[17/] At the present time, the open-endedness of the requirement that MSS not "constrain the development of" MetSats and MetAids in Region 2 operates as an absolute barrier to the use of these bands for commercially viable MSS services.

While the Commission apparently holds out some optimism that Footnote 735A can be suppressed,[18/] that is just one of the necessary steps to make MSS viable in these bands. Even that initial step is likely to encounter substantial opposition within the United States itself. The U.S. reluctance to accept these bands for MSS just three years ago arose from the substantial existing MetSat and MetAid use of these bands in this country. The National Oceanic and Atmospheric Administration ("NOAA") has consistently voiced its extreme reservations concerning any implementation of MSS at 1675-1710 MHz based on its heavy use to gather critical atmospheric data necessary to warn the public of tropical storms and other

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17/ ITU RR 735A.

18/ See Second NOI, FCC 95-36, slip op. at ¶ 35 & n.39.

adverse weather conditions. Even if the crucial step of removing special protection for MetSats and MetAids could be accomplished without compromising the integrity of these systems, it will simply set the stage for additional, perhaps protracted, sharing studies, not only to with existing weather satellites in the United States but with terrestrial fixed and mobile users around the world.

Moreover, the Second NOI does not fully address what is a more fundamental difficulty with the 1675-1710 MHz bands -- the fact that no corresponding downlink band has been proposed.[19/] While the uplink band is paired with the downlink band at 1492-1525 MHz (for which there is also a current co-primary allocation for MSS in Region 2 only), proposals to utilize that spectrum for MSS have met with vehement, and apparently intractable, opposition from the U.S. defense and aeronautical communities, which use these bands for aeronautical telemetry, including flight testing. It is for this reason that the ITU's allocation tables currently contain Footnote 722C, by which the United States formally reserved itself

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19/ The Commission does suggest the possibility of using this band with the downlink spectrum in the 2 GHz range. See Second NOI, FCC 95-36, slip op. at Table 5, n.98. Right now, there is a pairing of candidate MSS uplink and downlink in the 2 GHz range -- i.e., at 1985-2025 MHz and 2165-2200 MHz. Although pairing the 1675-1710 MHz band with the 2165-2200 MHz band is possible as a last resort, there still is more potential uplink than downlink spectrum. New candidate bands should be identified.

from the Region 2 co-primary allocation to MSS.[20/] Accordingly, while TRW certainly does not oppose the proposal, it believes the United States government needs to be prepared to support proposals for as many additional potential MSS bands as possible.

c. Regulatory/Procedural Constraints

The Second NOI raises a number of potential changes to ITU Resolution 46, which was adopted at WARC-92 to provide interim procedures for coordination of NGSO MSS systems. One omission from Resolution 46 that should be remedied at WRC-95 is the failure to include procedures for coordination of NGSO MSS feeder links (a fixed-satellite service ("FSS") use) and the GSO FSS in shared bands.[21/] It is imperative for the success of the NGSO MSS that revisions be made to apply appropriate procedures for coordination of NGSO MSS feeder links, specifically including procedures to facilitate coordination of particular bands both below and above 17.7 GHz on a bi-directional basis.

TRW is actively participating in the efforts of the IAC and other interested groups to develop the appropriate language and format of the needed revisions to Resolution 46. The ultimate objective is to provide a fair, and not unduly

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20/ To similar effect, Footnote 723 gives aeronautical telemetry uses priority over mobile services in Australia and Papua New Guinea.

21/ See additional discussion at Section A.2., infra.

burdensome, mechanism of achieving necessary coordinations. At this point, TRW has not taken a position on whether Resolution 46 should remain a stand-alone procedure or, as modified, be folded into the Radio Regulations. It expects, however, that the Conference Preparatory Meeting ("CPM") that commences at the end of March may provide significant guidance on this question.[22/]

2. Feeder Link Spectrum Requirements For "Big Leo" MSS Systems

As the Commission emphasizes in the Second NOI, "[o]btaining sufficient NGSO feeder link spectrum for 1.6/2.4 GHz 'Big LEO' MSS networks is critical for the introduction of those networks in the U.S. and globally."[23/]

22/ TRW has supported a request to extend the deadline for reply comments in this proceeding until after the CPM. See COMSAT Motion for Extension of Time, IC Docket No. 94-31, filed February 24, 1995.

23/ Second NOI, FCC 95-36, slip op. at ¶ 52. TRW recognizes that Teledesic Corporation, the proponent of a nongeostationary satellite system that would have service and feeder links in the 20/30 GHz bands, is trying to assert that its "system requirements" should be accommodated at WRC-95 under this agenda item. TRW strongly objects to any consideration of Teledesic's proposals for the 20/30 GHz band at WRC-95. Though an NGSO system proposal, Teledesic's application is not even accepted for filing by the Commission, and any attempt to recast its service link proposals as "NGSO MSS feeder links" is misleading. In short, any Commission or U.S. Government concession to Teledesic in the U.S. WRC-95 proposals could easily jeopardize any new allocations for true NGSO MSS feeder link systems.

Currently, the service link allocations that were secured at WARC-92 cannot be implemented until feeder link allocation issues are resolved.[24/]

The allocation of suitable spectrum for MSS feeder links encompasses two central issues: 1) the availability of sufficient spectrum for this purpose, and 2) the means by and terms under which NGSO MSS users will share such spectrum with other users. Early evaluations of various sharing scenarios have made clear that both co-directional and reverse-band (bi-directional) spectrum sharing solutions will be necessary in order to provide sufficient global spectrum for the implementation of multiple MSS systems.

On the issue of co-frequency sharing between NGSO MSS system feeder links and the GSO FSS, there have been significant disagreements as to the priority of use between NGSO MSS feeder link systems and prospective GSO FSS users.[25/] The most recent international assessment of many of the issues associated with NGSO MSS feeder link/GSO FSS sharing has occurred in ITU Task Group 4/5, which

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24/ Each of the three licenses issued to U.S.-based MSS systems includes a condition permitting the licensee to proceed to construct, at its own risk, satellites capable of operating in frequency bands for which it has applied. See, e.g., TRW Inc., DA 95-130, slip op. at ¶ 25. These satellites cannot be launched or operated, however, until final feeder link frequencies are assigned and the license condition is removed. Thus, as a practical matter, the U.S. MSS licensees are unable even to complete construction of satellites until the feeder link issue is resolved.

25/ See Second NOI, FCC 95-36, slip op. at ¶ 45.

concluded that regulatory bases must be established that recognize the need for both NGSO MSS and GSO FSS networks to operate in orderly fashion without persistent regulatory uncertainties.[26/] Task Group 4/5 evaluated several potential sharing situations, identified a number of frequency band segments between 3 and 30 GHz where sharing on a co-directional and/or bi-directional basis between the feeder links of NGSO MSS systems and GSO FSS systems may be feasible, and recommended certain conditions that should be considered for inclusion with any allocations that may be made. These evaluations are being considered by the IAC's IWG-4, and the preliminary results of IWG-4's analysis were incorporated into the Second NOI.[27/]

It is undeniable, however, that the output of Task Group 4/5 omitted certain FSS frequency bands below 30 GHz that may be suitable for use by NGSO MSS feeder link systems. For this reason, the record in this inquiry is not complete concerning the various bands proposed by NGSO MSS conditional licensees for feeder link use. Specifically, the 29.5-30.0 GHz and 19.7-20.2 GHz bands, in which TRW has proposed since 1991 to operate feeder links on a co-directional basis, and where it is now seeking authorization to use 300 MHz of spectrum in each direction for this purpose, are not fully discussed.

26/ See Second NOI, FCC 95-36, slip op. at ¶ 46.

27/ See Second NOI, FCC 95-36, slip. op at Table 2.

In the text of its Second NOI (at Table 2), the Commission appropriately included the 29.5-30.0 GHz and 19.7-20.2 GHz bands on its list of potential feeder link bands.[28/] Unfortunately, the bands did not make it into the Commission's Preliminary Draft Proposal No. 1/FL-MSS. TRW calls upon the Commission to correct this omission, and to take every available action to ensure that the subject bands get due international consideration.

TRW firmly believes that its proposed use of 300 megahertz of spectrum in the 27.5-30.0 GHz and 19.7-20.2 GHz bands for NGSO MSS feeder links can be accomplished without unduly constraining other FSS uses. Preliminary results of studies TRW has been conducting on the prospect of co-frequency sharing between Odyssey™ and GSO/FSS "VSAT-type" users are encouraging in this respect, and TRW expects to be in a position to present its analyses shortly (perhaps prior to the start of the CPM, but most certainly within the IAC process).

In pursuing the allocation of these subbands, the Commission, consistent with its proposals for other NGSO MSS feeder link subbands, should propose language waiving the requirements of RR 2613.[29/] Moreover, Resolution 46, as suitably modified, should apply to coordination between geostationary satellite networks and non-geostationary satellite networks, between non-geostationary

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28/ See id.

29/ See Second NOI, FCC 95-36, slip. op at ¶ 51.

networks, and between non-geostationary satellite networks and any terrestrial services.[30/] Finally, as suggested by Task Group 4/5 with regard to other subbands of the 27.5-30.0 GHz and 19.7-20.2 GHz bands, the regulation would specify that stations of GSO FSS networks that are brought into use in the subject subband after a date certain (November xx, 1995) shall neither claim protection from nor cause harmful interference to NGSO MSS feeder link networks in the same band.[31/] Appropriate changes to the Table of Allocations (RR Art. 8) to reflect this proposal are included in the Attachment hereto.

The United States should also continue to pursue the option, identified in Task Group 4/5 and carried forward in the CPM Report to WRC-95, of allocating 500 megahertz of spectrum in each direction at 29.0-29.5 GHz and 19.2-19.7 GHz for primary NGSO MSS feeder links. As is the case with the foregoing proposal, the requirements of RR 2613 would be inapplicable to this allocation, the allocation itself would be subject to the provisions of Resolution 46, as suitably modified, and the Task Group 4/5 Report recommendation regarding harmful interference to and/or from NGSO MSS networks and GSO FSS networks would apply. See Attachment.

30/ Per Footnotes 873 and 883, there are terrestrial allocations at 29.5-30.0 GHz and 19.7-20.2 GHz in certain countries.

31/ The Commission's proposals should be modified to include this last provision.

Finally, and as a third option, the United States should aggressively pursue the possibility that NGSO MSS feeder links can make bi-directional use of spectrum in the 18.8-19.7 GHz band (i.e., in the Earth-to-space direction) paired with a suitable band below 17.7 GHz for space-to-Earth transmissions on a co-directional or bi-directional basis. One very attractive candidate for the space-to-Earth link is the 15.4-15.7 GHz band,[32/] and TRW urges the aggressive pursuit of this band as well.[33/] The amount of spectrum to be allocated for reverse-band use at 18.8-19.7 GHz may exceed the 300 megahertz available at 15.4-15.7 GHz, to account for the increased technical difficulties likely to be encountered in the design of dual polarization transmission systems for 18.8-19.7 GHz, as compared for example to 15.4-15.7 GHz, and also for the prospect that an alternative band would be suitable for the space-to-Earth link. The availability of additional spectrum in the 19 GHz band will also provide needed flexibility to geostationary and nongeostationary satellite systems that will have to coordinate in this band under Resolution 46.

32/ TRW has introduced into the CPM preparatory and IAC processes a sharing study that shows the feasibility of the use of this band for space-to-Earth NGSO MSS feeder link use. See Documents No. US CPM-23, and IWG-4/50.

33/ TRW expressly supports the Commission's proposal to suppress Footnote 797 in the 15.4-15.7 GHz band.

These proposed uses of spectrum are fully consistent with the conclusions advanced in the Task Group 4/5 Report.[34/] Once again, the requirements of RR 2613 would not apply to this allocation (which would be on a co-primary basis), and the allocation itself would be subject to the provisions of Resolution 46, as suitably modified. See Attachment.

3. Additional MSS Spectrum Allocations.

At the outset of its discussion concerning spectrum requirements, the Commission observes that "[t]here are numerous existing or proposed networks worldwide."[35/] Indeed, at this juncture, it is more than evident that there is not enough MSS spectrum now allocated to accommodate emerging global MSS spectrum needs. Without even considering planned and future foreign systems, the U.S. systems already licensed and applied for will require use of much of the currently available spectrum. As the Commission notes, "the IAC estimates that when all forecasts are taken into account, a total of 150-300 MHz of spectrum will be required by the year 2005."[36/]

34/ Reverse-band use of the 27.5-30.0 GHz band is not considered practical at this time.

35/ Second NOI, FCC 95-36, slip op. at ¶ 59.

36/ Id. at ¶ 60.

Due to these constraints on already allocated spectrum, the U.S. government should also pursue the international allocation of suitable additional spectrum for use by NGSO MSS systems in addition to seeking enough feeder link spectrum to accommodate current system proposals. The principal difficulty in this endeavor is that most of the bands currently identified have significant drawbacks, and may be very difficult to secure at WRC-95.

In addition to the 1675-1710 MHz bands, discussed above at Section A.1.b., the Commission has also proposed to modify and expand the existing MSS allocations near 2 GHz, portions of which are currently scheduled to be available for MSS in the U.S. only beginning in 1996.[37/] TRW wholeheartedly endorses this effort, but cautions that, as with the 1675-1710 MHz bands, the potential viability of these bands for MSS is sufficiently uncertain that they may not offer an effective solution to the long-term needs of MSS licenses. As discussed more fully in the following section, there are significant near-term impediments to implementing MSS in these bands, and the Commission and the MSS industry are only beginning to investigate the extent to which these bands are used throughout the world, and what conflicting uses might ultimately impede successful transition. This simply highlights the fact that the U.S. government needs to explore all potential MSS bands thoroughly, so that it will be able to maximize its options at the WRC.

37/ See Section 4, infra.

4. Date Of Entry Into Force Of MSS Spectrum Allocations Around 2 GHz.

In the Second NOI, the Commission notes that WARC-92 established differing dates of entry into force for the global MSS bands at 2 GHz (1980 - 2010 MHz (uplink) and 2170 - 2200 MHz (downlink)).[38/] Footnote 746C provides that these bands will become available in the United States in 1996, while Footnote 746B establishes an effective date of January 1, 2005 everywhere else in the world. Following WARC-92, many MSS system proponents advocated advancing the global effective date for these frequency bands. Since WARC-92, however, new information and changed circumstances have made it clear that the United States has little to gain from pursuing what would be a difficult fight to change the global 2 GHz implementation date. The United States should focus on securing sufficient spectrum for long-term MSS development rather than attempting to coerce the rest of the world to go along with the U.S. implementation date. Indeed, TRW believes that it would be in the best interest of the United States -- particularly as it pursues additional and implementing MSS Allocations and associated regulatory revisions -- to offer a realignment of the date of entry for the 2 GHz bands, so that the U.S. date will coincide with the date applicable in rest of the world.

38/ See Second NOI, FCC 95-36, slip op. at ¶ 63.